

Space Weather Forecast

Issued on Wednesday, 17 November 2021 at 13:18 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: No significant activity expected.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar Activity was very low, with no notable flares observed in the last 24 hours. There are three small and magnetically simple sunspot regions on the Earth-facing disc. No Earth-directed CMEs have been observed in available imagery.

Solar Wind / Geomagnetic Activity: The solar wind speed has been elevated or strong through the 24 hour period following connection to a fast wind from a coronal hole. Density has been close to average. Total magnetic field strength was mainly weak, with only a very brief moderate interval. The important north-south component has varied with an equal number of positive (northward) and negative (southward) periods. Geomagnetic activity was mainly Quiet (Kp2) with an Active (Kp4) interval from 17/0001-0300 UTC.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is expected to be mainly Very Low, with a slight chance of Common-class flares from the three sunspot regions on the visible disc.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs in the current forecast. Solar wind speeds are expected to remain elevated or strong through Day 1 (17th Nov) then declining through Days 2 to 4 (18th-20th) to background levels. Geomagnetic activity is expected to be Quiet or Unsettled on Day 1, with the chance of an isolated Active interval. Mainly Quiet activity is then forecast during Days 2-4, with a slight but decreasing chance of Unsettled periods.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to remain at background levels with no solar radiation storms occurring.

Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	5	1	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	No	3	3	3	3
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = cm⁻²sr⁻¹s⁻¹)